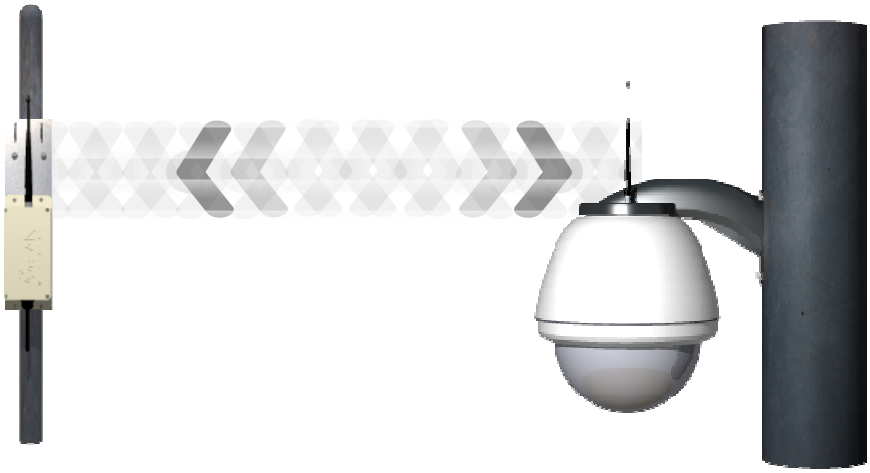
AW-D5800

User's Manual

Thank you for your purchase of the AW-D5800 Wireless Ethernet Dome.

The AvaLAN wireless radio functions in place of an Ethernet cable and provides a transparent wireless point to point Ethernet cable replacement.

AvaLAN radios automatically sense the type of network client device and cross-over cables are never necessary.



The AW-D5800 Kit Contains:

(1) Videolarm (FDW75C2N) outdoor dome housing with heater/blower
(2) 120VAC to 24VAC/40Va transformers
(1) AW-5800x Mating radio transceiver
(2) AW5-5800 5dBi omni antennae
(1) 120VAC to 9VDC power supply
(1) 30ft outdoor grade CAT5 cable
(1) POE (Power over Ethernet) injector
(1) Antenna/radio wall mounting kits

Initial Setup:

Camera:

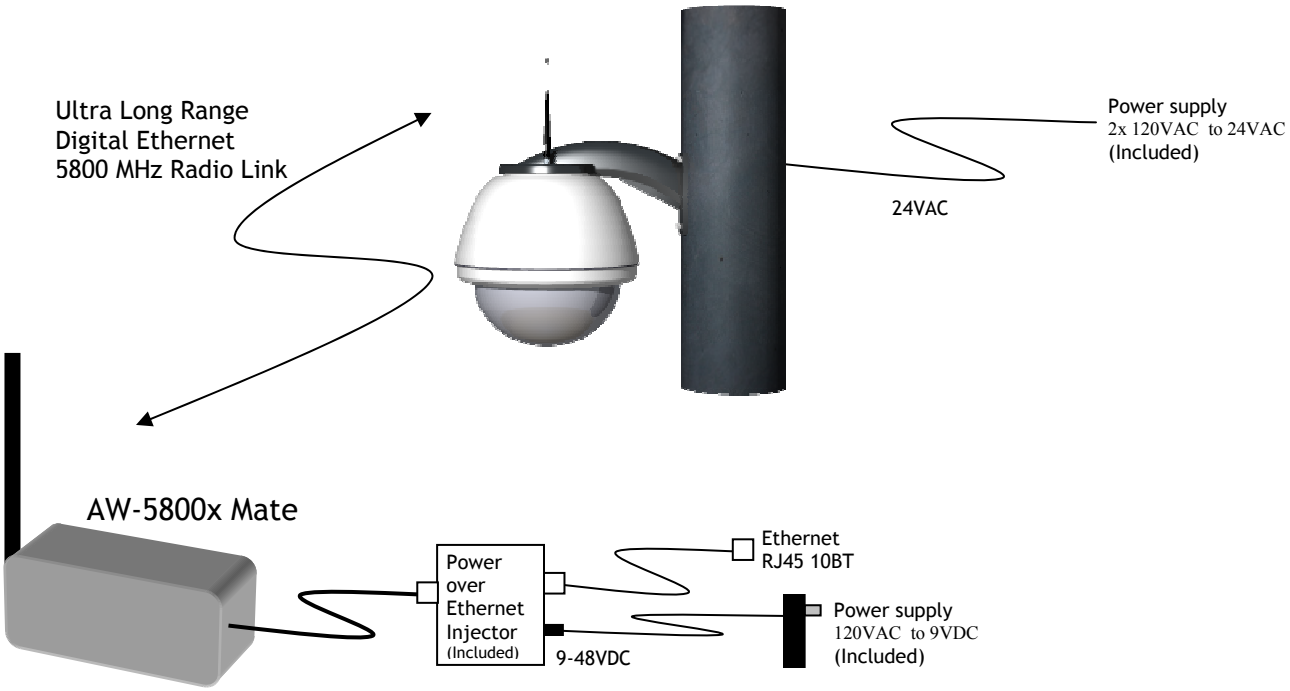
1. Setup your network camera while attached to a network. Please refer to the manufacturer's instructions provided by the camera.
2. Ensure the video from the camera can be viewed on a networked PC.
3. To optimize the camera for use over a wireless link please see camera performance FAQ at www.avalanwireless.com/support.

Dome:

1. Install the Videolarm FDW75C2N/AW-D5800 dome housing using the supplied 120VAC to 24VAC transformers. Please contact Videolarm for installation support on the dome housing. www.videolarm.com 1-800-554-1124.
2. Mount the network camera within the dome housing according to Videolarm's instructions.
3. Attach antenna to the dome.

Wireless Setup:

1. Install in the AW-5800x.
2. Attach the antenna to the AW-5800x (see Appendix A for polarization guide, page 6)
3. Attach the white power injector to the end of the Ethernet Cable
4. Attach the 120VAC to 9VDC power supply to the white power injector.
5. Connect an Ethernet cable from the injector to the network (or directly to a PC).
6. The AvaLAN radios automatically select the best radio channel, encrypt the Ethernet data and transports the data wirelessly to its mate.
7. Use an internet browser on a networked PC to view the video from the camera. Ensure that the subnet/IP addresses of the PC and the camera are compatible.
8. For radio/network troubleshooting see page 3.



LED display:

The AW5800x has a 16 LED display to display the status of the device.

Name	Function	Color
Power	Unit has power and has successfully booted.	**Red**
RF TX	Radio transmission is occurring.	**Green**
RF RX	Radio reception is occurring.	**Green**
Eth Link	The Ethernet Port has a valid Ethernet connection	**Green**
1 (channel) ***2 (channel)*** ***4 (channel)*** ***8 (channel)*** ***16 (channel)*** ***32 (channel)*** By adding the values that are lit, the user can determine the current radio channel.	1 5728.125 Mhz 2 5730.208 Mhz 3 5732.292 Mhz 4 5734.375 Mhz 5 5736.458 Mhz 6 5738.542 Mhz 7 5740.625 Mhz 8 5742.708 Mhz 9 5744.792 Mhz 10 5746.875 Mhz 11 5748.958 Mhz 12 5751.042 Mhz 13 5753.125 Mhz 14 5755.208 Mhz 15 5757.292 Mhz 16 5759.375 Mhz 17 5761.458 Mhz 18 5763.542 Mhz 19 5765.625 Mhz 20 5767.708 Mhz 21 5769.792 Mhz 22 5771.875 Mhz 23 5773.958 Mhz 24 5776.042 Mhz 25 5778.125 Mhz 26 5780.208 Mhz 27 5782.292 Mhz 28 5784.375 Mhz 29 5786.458 Mhz 30 5788.542 Mhz 31 5790.625 Mhz 32 5792.708 Mhz 33 5794.792 Mhz 34 5796.875 Mhz 35 5798.958 Mhz 36 5801.042 Mhz 37 5803.125 Mhz 38 5805.208 Mhz 39 5807.292 Mhz 40 5809.375 Mhz 41 5811.458 Mhz 42 5813.542 Mhz 43 5815.625 Mhz 44 5817.708 Mhz 45 5819.792 Mhz 46 5821.875 Mhz 47 5823.958 Mhz 48 5826.042 Mhz 49 5828.125 Mhz 50 5830.208 Mhz 51 5832.292 Mhz 52 5834.375 Mhz 53 5836.458 Mhz 54 5838.542 Mhz 55 5840.625 Mhz 56 5842.708 Mhz 57 5844.792 Mhz 58 5846.875 Mhz	**Green**
Link Quality Meter ***The more LEDs that are lit the higher the link quality.***	Excellent link quality - No retransmissions	**Green**
	Very good link quality - Few retransmissions	**Green**
	Good link quality - Occasional retransmissions	**Amber**
	Fair link quality - Some retransmissions	**Amber**
	Poor link quality - Many retransmissions	**Red**
	No link quality No link available	**Red**

Troubleshooting:

See the online installation tutorial and FAQ at www.avalanwireless.com

No Power LED:

Check the power connections.

No Radio Link LED:

The radio is looking for its matched partner. If both units are powered up and the Power LEDs are active they may be too far away to create the radio connection. Try other locations that may have a less obstructed path or try to reorient the antennas. Directional antennas get their best range when they are oriented to point directly at each other with the antenna elements oriented in the same plane (eg. vertically or horizontally)

Radio LINK LED on but Link Quality Indicator is low:

The units may be too far away to create a good radio connection. Try other locations that may have a less obstructed path or try to reorient the antennas.

No Ethernet LINK LED:

Check your network connections.

Installing Multiple systems in close proximity:

See the online installation tutorial and FAQ at www.avalanwireless.com

Still not working?

Temporarily use an Ethernet cable to see if the network is working over a wired connection. If an Ethernet cable does not work then the problem is with the network.

Support Email: support@avalanwireless.com **Support helpline:** (650) 384-0000

Advanced Settings:

Automatic frequency selection mode (DIP switches – all OFF for automatic mode)

The AW5800i is designed to automatically select and continuously optimize the performance of its radio channel. The radio channel is monitored to ensure it is providing low error rates necessary for successful radio transmission. In the event that the error rate rises, the AW5800i will autonomously change to a new channel. There are 58 non-overlapping channels.

Manual frequency selection mode

This mode enables the user to restrict the operation of the AW5800i to **a specific channel.** This can be done by setting DIP switches 3-8 as shown in the table below.

Channel #	DIP 3 Add 1	DIP 4 Add 2	DIP 5 Add 4	DIP 6 Add 8	DIP 7 Add 16	DIP 8 Add 32	Tx Frequency
0							AUTO MODE
1	x						5728.1250 Mhz
2		x					5730.2083 Mhz
3	x	x					5732.2917 Mhz
4			x				5734.3750 Mhz
5	x		x				5736.4583 Mhz
6		x	x				5738.5417 Mhz
7	x	x	x				5740.6250 Mhz
8				x			5742.7083 Mhz
9	x			x			5744.7917 Mhz
10		x		x			5746.8750 Mhz
11	x	x		x			5748.9583 Mhz
12			x	x			5751.0417 Mhz
13	x		x	x			5753.1250 Mhz
14		x	x	x			5755.2083 Mhz
15	x	x	x	x			5757.2917 Mhz
16					x		5759.3750 Mhz
17	x				x		5761.4583 Mhz
18		x			x		5763.5417 Mhz
19	x	x			x		5765.6250 Mhz
20			x		x		5767.7083 Mhz
21	x		x		x		5769.7917 Mhz
22		x	x		x		5771.8750 Mhz
23	x	x	x		x		5773.9583 Mhz
24				x	x		5776.0417 Mhz
25	x			x	x		5778.1250 Mhz
26		x		x	x		5780.2083 Mhz
27	x	x		x	x		5782.2917 Mhz
28			x	x	x		5784.3750 Mhz
29	x		x	x	x		5786.4583 Mhz
30		x	x	x	x		5788.5417 Mhz
31	x	x	x	x	x		5790.6250 Mhz
32						x	5792.7083 Mhz
33	x					x	5794.7917 Mhz
34		x				x	5796.8750 Mhz
35	x	x				x	5798.9583 Mhz
36			x			x	5801.0417 Mhz
37	x		x			x	5803.1250 Mhz
38		x	x			x	5805.2083 Mhz
39	x	x	x			x	5807.2917 Mhz
40				x		x	5809.3750 Mhz
41	x			x		x	5811.4583 Mhz
42		x		x		x	5813.5417 Mhz
43	x	x		x		x	5815.6250 Mhz
44			x	x		x	5817.7083 Mhz
45	x		x	x		x	5819.7917 Mhz
46		x	x	x		x	5821.8750 Mhz
47	x	x	x	x		x	5823.9583 Mhz
48					x	x	5826.0417 Mhz
49	x				x	x	5828.1250 Mhz
50		x			x	x	5830.2083 Mhz
51	x	x			x	x	5832.2917 Mhz
52			x		x	x	5834.3750 Mhz
53	x		x		x	x	5836.4583 Mhz
54		x	x		x	x	5838.5417 Mhz
55	x	x	x		x	x	5840.6250 Mhz
56				x	x	x	5842.7083 Mhz
57	x			x	x	x	5844.7917 Mhz
58		x		x	x	x	5846.8750 Mhz

Site survey mode (DIP switch 2 - default is OFF for normal operation)

In this mode the AW5800i can perform a site survey. With this mode activated the radios send and receive at 100% capacity by transceiving self-generated simulated data. The installer can monitor the Link Quality display to assess channel quality while optimizing antennae orientation. The installer can manually select each channel to evaluate performance and identify the best channels for operation. By identifying channels with poor performance it is possible to identify possible interferers and use “manual frequency selection mode” to avoid portions of the band or select a fixed operating frequency. **Important note:** Ethernet traffic does not get transported while the radios are in this mode.

Power save mode (DIP switch 1 - default is OFF for normal LED display)

In this mode the LED display on the Master unit can be turned off (solar applications).

Technical Specifications: (typical)

Characteristic	Specification - description
RF transmission rate:	1.54 Mb/s
Throughput:	1.01 Mb/s
Output power:	+20dBm (20 Watts EIRP used with 23dBi antennae AW23-5800)
Receive sensitivity:	-98dBm at 10e-4 BER (-121dBm with 23dBi antennae AW23-5800)
Radio link budget:	128dB with 5dBi antenna AW5-5800 164dB with 23dBi antennae AW23-5800
Line of Sight Range:	2 Miles Line of Sight with 5dBi antenna AW5-5800 40 miles Line of Sight with 23dBi antennae AW23-5800
Voltage Range: **AW-5800x** **AW-D5800**	 9-48VDC 24VAC
Power Consumption: **AW-5800x** **AW-D5800**	 TX 1.8Watts and RX 1.0Watts over 9-48VDC input voltage. 55Watts (including 20 watt heater)
Radio channels/bandwidth:	58 Non-overlapping with 2.0833MHz spacing and 1.75MHz occupied bandwidth.
Automatic frequency select:	Yes – radio channel automatically selected and adaptively optimized
Status LEDs:	Power, Ethernet Link, RF RX, RF TX, 6/Channel and 6/Link Quality
Error correction technique:	Sub-block error detection and retransmission
Adjacent-band rejection:	Receiver filter attenuates adjacent band interference.
Temperature range: **AW-5800x** **AW-D5800**	 -40˚C to 70˚C -30˚C to 50˚C - Depends upon temp range of Camera Heater turns on at 10˚C off at 27˚C, Blower turns on at 45˚C off at 27˚C
Power over Ethernet:	Use with 9VDC to 48VDC POE systems with lines 4/5 positive, 7/8 ground.

Product limited warranty:
This product is warranted to the original purchaser for normal use for a period of 180 days from the date of purchase. If a defect covered under this warranty occurs Avalan will repair or replace the defective part, at its option, at no cost. This warranty does not cover defects resulting from misuse or modification of the product.

Compliance Statement (Part 15.19)
This device complies with Part 15 of the FCC Rules.
Operation is subject to the following two conditions:
1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

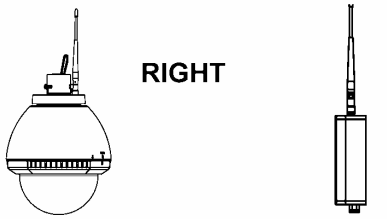
Warning (Part 15.21)
Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

RF Exposure (OET Bulletin 65)
To comply with FCC RF exposure requirements for mobile transmitting devices, this transmitter should only be used or installed at locations where there is at least 20cm separation distance between the antenna and all persons.

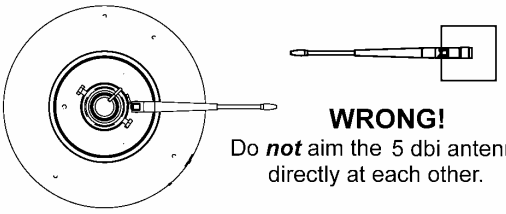
Information to the User - Part 15.105 (b)
Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
--Reorient or relocate the receiving antenna.
--Increase the separation between the equipment and receiver.
--Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
--Consult the dealer or an experienced radio/TV technician for help.

Appendix A - Antenna Alignment Guide

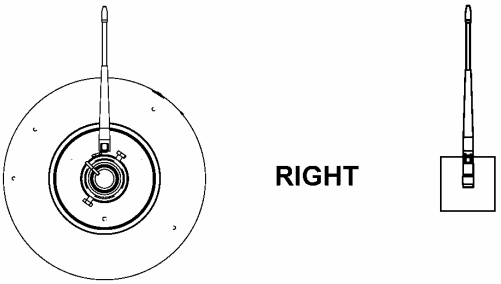
WRONG!



RIGHT



WRONG!
Do ***not*** aim the 5 dbi antenna directly at each other.



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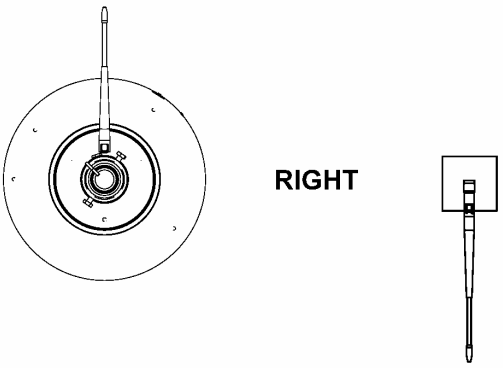

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